

### **REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow.

Claim 1 is currently being amended.

Claim 2 has been canceled.

Claims 22-23 are being added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, are presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 3-23 are now pending in this application.

#### **1. Drawing Objections/Drawing Corrections**

The Examiner objected to the drawings on various bases. Responsive to the Examiner's objections, various amendments have been made to the drawings and to the specification.

In connection with the Examiner's objection to the use of the reference character as set forth in paragraph 1 of the Office Action, Applicant has amended Fig. 1 of the drawings to refer to SRAM & Flash Interface 27 and SDRAM Interface 28. A corresponding change has been made in the specification.

In connection with the Examiner's objections as set forth in paragraphs 2 and 3, Applicant has amended the drawings in the manner suggested by the Examiner.

In connection with the objection as set forth in paragraph 4, Applicant has submitted new formal drawings which are believed to be more legible than the original drawings.

In connection with the drawing objection as set forth in paragraph 5, Applicant has amended the specification to make it consistent with the drawings.

In connection with the Examiner's statement in paragraph 6, the Applicant has reviewed the drawings and removed additional drawing errors. For example, Applicant has made a similar change in connection with the reference number "60-M" as was made responsive to the Examiner's objection in paragraph 5 with regard to the reference number "70-M". Additionally, Applicant has made changes similar to those described with regard to paragraphs 2 and 3 of the Office Action in connection with various other reference numbers used in the drawings.

## **2. Claim Rejections - 35 U.S.C. § 102(e)**

The Examiner rejected claims 1 and 2 under 35 U.S.C. § 102(e) as being anticipated by Wolf ("Wolf"; U.S. Pat. No. 6,385,751). The Examiner rejected claims 3-10 under 35 U.S.C. § 103(a) as being unpatentable over Wolf in view of McSpadden ("McSpadden"; U.S. Pat. No. 4,216,540).

Claim 1 as amended recites a general purpose DMA controller and an arithmetic circuit. The arithmetic circuit is capable of being programmed with a plurality of different polynomial equations usable to generate error checking values of different types.

The Examiner rejects claim 1 as being anticipated by Wolf. Applicant respectfully submits that Wolf does not teach or suggest the combination of features set forth above. First, Wolf does not teach or suggest claim 1 because Wolf does not teach or suggest a ***general purpose DMA controller***. With regard to this feature, the Examiner takes the position that "in Col. 20, lines 49-53, Wolf teaches that the DSP in Figure 6 is used to implement the function of a DMA controller that is to provide general control functions for the purpose of accessing memory, hence the DSP in Figure 6 of Wolf is a general purpose DMA." The passage of Wolf cited by the Examiner states as follows:

Whenever a DSP is performing a DMA block transfer, it must change the address bus to point to the DMA address. The DMA address is 0x000 for the encoder and 0x400 for the decoder.

Col. 20, lines 49-53. Thus, the DSP in Wolf is merely a hardware resource that serves as a source or destination of data transferred in a DMA block transfer. The DSP does not **control** the DMA block transfer, it is merely a **participant** in the DMA transfer process. Accordingly, **the DSP in Wolf is not a DMA controller** and the system of Wolf does not teach or suggest this feature of claim 1.

Furthermore, not only does Wolf not teach or suggest a "DMA controller," Wolf also does not teach or suggest a "**general purpose** DMA controller." Claim 1 has been amended to clarify what is meant by a "general purpose" DMA controller. That is, claim 1 now recites that the DMA controller is "configured to control a plurality of different types of DMA transfers between a plurality of different combinations of a plurality of different types of hardware resources." The DSP in Wolf is not capable of controlling a plurality of different types of DMA transfers between a plurality of different combinations of a plurality of different types of hardware resources.

Finally, Wolf does not teach or suggest an arithmetic circuit which is "capable of being programmed with a plurality of **different polynomial equations** usable to generate **error checking values of different types**." For example, as disclosed the specification, the different types of error checking values may include CRC-16, CRC-16 Reverse, CRC-CCITT, CRC-CCITT Reverse, and CRC-32 values. Advantageously, this arrangement allows the arithmetic circuit to generate different types of error checking values for use with the different types of DMA transfers that the general purpose DMA controller is liable to perform.

In connection with the arithmetic circuit, the Examiner cites Wolf, col. 3, lines 24-46 and Wolf, col. 4, lines 59-66. This passage discusses the utilization of a generator polynomial  $\gamma(x)$  and the use of an integer  $j_0$  to vary the result of the generator polynomial  $\gamma(x)$ . Although the Examiner mentions the generator polynomial  $\gamma(x)$  in Wolf, the Examiner does not appear

to specifically address the use of different polynomial equations to generate error checking values of different types. Applicant respectfully submits that this feature also is not taught or suggested by Wolf.

McSpadden relates to a programmable polynomial generator. The Examiner cites McSpadden in connection with the features of dependent claims 3 and 10. McSpadden, however, does not teach or suggest the combination of features described above in connection with claim 1.

Accordingly, for the foregoing reasons, it is respectfully submitted that Wolf does not teach or suggest the system of claim 1, and allowance of claim 1 is respectfully requested. The remaining claims are dependent claims and are allowable for at least the reasons that claim 1 is allowable.

### **3. New Claims**

Applicant has added new claims 22-23 to the application. Claim 22 recites a plurality of general purpose DMA controllers and a plurality of arithmetic circuits. The arithmetic circuits are capable of being programmed with a plurality of different polynomial equations usable to generate error checking values of different types. Accordingly, new claim 22 is allowable for the same reasons that claim 1 is allowable. Claim 23 depends from claim 22 and therefore is allowable for at least the reasons that claim 22 is allowable.

### **4. Allowable Subject Matter**

The Applicant notes with appreciation the Examiner's indication that claims 11-21 are allowed.

### **5. Conclusion**

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

Appl. No. 09/675,855  
Amdt. dated May 27, 2003  
Reply to Office Action of February 27, 2003

Atty. Dkt. No. 00AB147 (081696-0235)

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1447. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1447. If any extensions of time are needed for timely acceptance of papers submitted herewith, applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 05-1447.

Respectfully submitted,

Date

5/27/03

By

D. G. Luetgen

FOLEY & LARDNER  
Suite 3800  
777 East Wisconsin Avenue  
Milwaukee, Wisconsin 53202-5306  
Telephone: (414) 297-5769  
Facsimile: (414) 297-4900

David G. Luetgen  
Attorney for Applicant  
Registration No. 39,282